

For HVAC, Irrigation, OEM, Commercial and Institutional Applications

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

Butterfly Valves

Series DBF-03 Full Lug and DBF-04 Wafer

Sizes: 2" - 12" (50-300mm) 200psi (13.8 bar)

Watts Series DBF resilient seated butterfly valves are available in sizes 2"-12" (50-300mm), wafer or lug body design. This series was designed to meet the stringent requirements for HVAC, Irrigation, OEM, Commercial and Institutional applications, and wherever positive shutoff is required for liquids, gases, and slurries. Incorporating a 200psi (13.8 bar) pressure rating for 2"-12" (50-300mm), the Series DBF is standardly constructed of a ductile iron body, an aluminum bronze, ductile iron or 316SS disc, and a 416SS or 316SS shaft. Standard seat materials available include Buna-N, EPDM, and Viton®. A phenolic-backed seat prevents the seat from collapsing or dislodging. In addition to the above features, the Series DBF mounting pad is designed to ISO 5211 standard to accommodate lever handles, gear operators or actuator.

The Watts Series DBF butterfly valves are designed and manufactured for use with ANSI 125 or 150 Class flanges and to comply with API 609 and MSS-SP-67.

Features

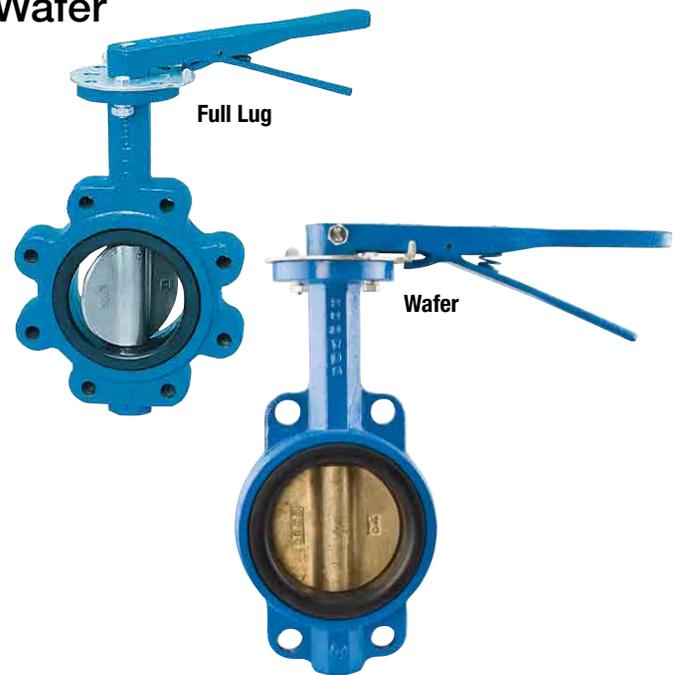
Operators – Ten-position handle is standard. An infinite positioning/locking handle is also available on valve sizes 2"-12" (50-300mm). The infinite position Pos-Lok throttle plate incorporates a memory stop and a padlocking device in the fully closed position. Manual, worm-gear operators are available for all valves and are recommended on 8" (200mm) and larger sizes. Watts butterfly valves are also available with electric or pneumatic actuators and chain wheel operators to satisfy a wide variety of requirements.

Shaft – One-piece shaft delivers positive disc-to-seat location with maximum strength. 416SS is standard with aluminum bronze and ductile iron discs and 316SS shaft with stainless steel disc.

Shaft Bushings – Duralon® bushings (3) provide shaft support for proper shaft alignment and minimal shaft deflection.

Shaft Seal – To prevent shaft leakage, the bidirectional shaft seal prevents external contamination of stem area and provides a backup seal to the primary shaft seal formed by the disc/seat interface.

Body – Watts Butterfly Valves are available in Full Lug (DBF-03) and Wafer (DBF-04) types designed for use between ANSI 125 and 150 flanges. Face-to-face dimensions comply with API 609 and MSS-SP-67. All valves are designed to accommodate 2" of insulation. The standard body material is ASTM A-536 ductile iron.



Disc – Disc edge is machined and polished 360° to assure leak-tight shutoff while minimizing operating torque. Positive, disc-to-shaft connection is provided by stainless steel precision taper pins that are vibration proof.

Seat – Phenolic-backed, non-collapsible, resilient seat is mechanically secured to provide dead-end service to the full 200psi (13.8 bar) pressure rating. Seat face eliminates the need for flange gaskets. Full 360° sealing isolates the body components from the media and provides the primary shaft seal. Available in EPDM, Buna-N, and Viton®.

Duralon® is a Registered Trademark of Rexnord Corporation

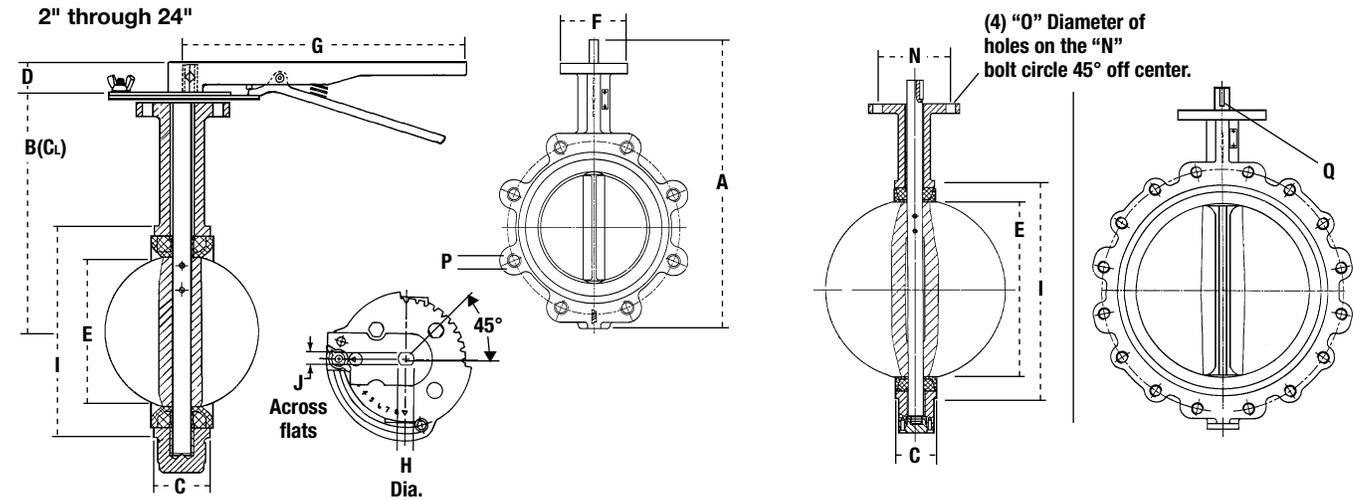
Teflon® is a Registered Trademark of E.I. DuPont de Nemours, Co., Inc.

Viton® is a registered trademark of DuPont Dow Elastomers.

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

Dimensions



Size	A		B		C		D		E		F		G		H		I		J	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
2"	10 ³ / ₄	273	6 ³ / ₈	161	1 ¹ / ₈	42	1 ¹ / ₄	32	2 ¹ / ₈	54	3 ¹ / ₁₆	77	10 ¹ / ₂	267	1/2	13	3 ³ / ₄	95	3/8	9
2 ¹ / ₂ "	11 ¹ / ₂	295	6 ⁷ / ₈	175	1 ³ / ₄	45	1 ¹ / ₄	32	2 ¹ / ₁₆	65	3 ¹ / ₁₆	77	10 ¹ / ₂	267	1/2	13	4 ¹ / ₄	108	3/8	9
3"	12 ¹ / ₂	308	7 ¹ / ₈	181	1 ³ / ₄	45	1 ¹ / ₄	32	3 ¹ / ₁₆	79	3 ¹ / ₁₆	77	10 ¹ / ₂	267	1/2	13	4 ³ / ₄	120	3/8	9
4"	13 ³ / ₈	346	7 ⁷ / ₈	200	2	52	1 ¹ / ₄	32	4 ¹ / ₈	105	3 ³ / ₈	92	10 ¹ / ₂	267	5/8	16	6 ¹ / ₁₆	154	3/8	10
5"	14 ³ / ₈	372	8 ³ / ₈	213	2 ¹ / ₈	54	1 ¹ / ₄	32	4 ⁷ / ₈	124	3 ³ / ₈	92	10 ¹ / ₂	267	3/4	19	7 ⁷ / ₈	181	1/2	13
6"	15 ¹ / ₂	397	8 ⁷ / ₈	226	2 ³ / ₁₆	55	1 ¹ / ₄	32	6 ¹ / ₈	156	3 ³ / ₈	92	10 ¹ / ₂	267	3/4	19	8 ³ / ₁₆	208	1/2	13
8"	18 ¹ / ₂	479	10 ¹ / ₄	260	2 ³ / ₈	60	1 ³ / ₄	45	8	200	4 ¹ / ₂	115	14	356	7/8	22	10 ¹ / ₄	260	5/8	16
10"	21 ¹ / ₄	540	11 ¹ / ₂	292	2 ⁵ / ₈	66	1 ³ / ₄	45	9 ⁷ / ₈	251	4 ¹ / ₂	115	14	356	1 ¹ / ₈	29	12 ⁵ / ₈	320	3/4	19
12"	24 ³ / ₄	626	13 ³ / ₄	337	3	76	1 ³ / ₄	45	11 ⁷ / ₈	301	5 ¹ / ₂	140	14	356	1 ¹ / ₄	32	14 ³ / ₄	375	1 ¹ / ₄	32

For 14" - 24" BF ① Series Dimensional Data,
Request Engineering Spec Sheet ES-BF-03-M2/BF-04-M2.

Size	Top Plate Drilling		Tapped Lug Data				Key Way		Weight†					
	N	O	Bolt Circle	No. Holes	Bolt P	Q	Q	DBF-03	DBF-04	DBF-04				
	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.		
2"	2 ¹ / ₄	57	1/4	6	4 ³ / ₄	121	4	5/8"-11UNC x 1 ¹ / ₄ "	-	-	8	3.6	6	2.7
2 ¹ / ₂ "	2 ¹ / ₄	57	1/4	6	5 ¹ / ₂	140	4	5/8"-11UNC x 1 ³ / ₈ "	-	-	10	4.5	7	3.2
3"	2 ¹ / ₄	57	1/4	6	6	150	4	5/8"-11UNC x 1 ³ / ₈ "	-	-	10	4.5	7	3.2
4"	2 ³ / ₄	70	3/8	10	7 ¹ / ₂	191	8	5/8"-11UNC x 1 ¹ / ₂ "	-	-	17	7.7	12	5.4
5"	2 ³ / ₄	70	3/8	10	8 ¹ / ₂	216	8	3/4"-10UNC x 1 ³ / ₄ "	-	-	25	11.3	16	7.3
6"	2 ³ / ₄	70	3/8	10	9 ¹ / ₂	241	8	3/4"-10UNC x 2"	-	-	27	12.2	20	9.1
8"	3 ¹ / ₂	89	5/8	16	11 ¹ / ₄	298	8	3/4"-10UNC x 2 ¹ / ₈ "	-	-	40	18.1	29	13.2
10"	3 ¹ / ₂	89	5/8	16	14 ¹ / ₄	362	12	7/8"-9UNC x 2 ¹ / ₄ "	-	-	63	28.6	48	21.8
12"	4 ¹ / ₄	108	5/8	16	17	432	12	7/8"-9UNC x 2 ¹ / ₄ "	1/4 x 1	6 x 25	107	48.5	78	35.4

†Weights are for valves with ductile iron or aluminum bronze discs and 10-position lever handles. Refer to Watts' folder F-CDBF for butterfly valve weights with gear actuators, or consult factory.

SEATING TORQUE Buna-N, EPDM, Viton	
Size	Normal Conditions WET/DRY
2"	134/214
2 ¹ / ₂ "	190/289
3"	250/387
4"	390/644
5"	600/959
6"	907/1,542
8"	1,697/2,919
10"	2,500/4,857
12"	3,300/7,071

CV RATING (Full Open)	
Size	CV Rating
2"	135
2 ¹ / ₂ "	220
3"	302
4"	600
5"	1,022
6"	1,579
8"	3,136
10"	5,340
12"	8,250

How to Order Watts Series DBF

10 - DBF- 03 - 121 - G - M2

Size: _____
 Series: _____
 Body: _____
 Disc: _____
 Shaft: _____
 Seat: _____
 Operator: _____
 M2 Series: _____

Materials

- Body:** ASTM A-536 Ductile Iron.
 - Bushing:** Duralon (3): Teflon® - Dacron liner bonded to fiberglass - epoxy resin outer shell.
 - Stem O-rings:** Buna-N
 - Disc:** ASTM A-395 Ductile Iron / Electroless Nickel Plated.
ASTM B-148 Aluminum Bronze
ASTM A-351 type 316SS
 - Shaft:** 416 Stainless Steel
316 Stainless Steel on 316SS Disc Models
 - Seat:** EPDM: +5°F to 248°F (-15°C to +120°C)
Buna-N: +14°F to 176°F (-10°C to +80°C)
Viton: -4°F to 302°F (-20°C to +150°C)
- Note:** Do not use EPDM when hydrocarbons are present.



A Watts Water Technologies Company



ISO 9001-2008
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